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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,709	08/25/2008	**Ronny Kiel**	016906-0456	3791

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EXAMINER	
TOWNS, BRITTANY E	

ART UNIT	PAPER NUMBER
3749	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,709	KIEL ET AL.	
	Examiner	Art Unit	
	BRITTANY TOWNS	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *(12/29/2005)*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Foreign Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Inventorship

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Regarding claim 1, the phrase "while a heat exchanger" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al (U.S. Application Publication No. 2004/0093884) in view of Nagata et al (U.S. Application Publication No. 2002/0129932).

Regarding Claim 1, Seki et al teaches an air-conditioning system for vehicles, with a blower for generating an air stream (e.g. a centrifugal blower blowing into a lowermost air inflow space (12), paragraph 044) with an evaporator which is arranged downstream of the blower and through which the air stream flows (e.g. an evaporator (13) is positioned downstream from the centrifugal blower, paragraph 0046), with a mixing flap following the evaporator (e.g. an air mixing door (14) is arranged downstream of the evaporator (13), paragraph 0047), the air stream being apportionable by means of the mixing flap to a first flow duct and/or a second flow

duct, with the result that a first and/or a second part air stream can be generated (e.g. the air mixing door (14) can adjust the volume of air flowing into a hot air passage (18) and cold air passage (16), paragraph 0049-0050), the first flow duct (cold-air duct) issuing into a mixing chamber (e.g. a cold air passage (16), Figure 1), while a heat exchanger for warming the second part air stream is arranged in the second flow duct (warm-air duct) and the second flow duct issues, downstream of the heat exchanger (e.g. a hot air passage (18) which is heated by the heat exchanger (15), paragraph 0051), into the mixing chamber (e.g. an air mixing portion (19), paragraph 0052), a mixed air stream being capable of being generated from the first and the second part air stream in the mixing chamber, air outlet ducts leading from the mixing chamber into different regions of the vehicle interior (e.g. the defroster opening (20), face opening (21) receive air from the air mixing portion (19) to supply air in the interior of the vehicle, paragraph 054, Figure 1), and the mixing flap being pivotable about an axis of rotation between a first end position, in which it completely closes the first flow •duct (e.g. the air mixing door (14) when at the furthest left position as shown in the dotted lines in Figure 1, it blocks off the cold air passage (16), Figure 1), and a Second end position, in which it completely closes the second flow duct (e.g. the mixing door (14) in the furthest right position as shown in a solid line in Figure 1, blocks the hot air passage (18), Figure 1), and, in the intermediate positions, allowing a direct passage of cold air from the first flow duct into the second flow duct (e.g. when the mixing door (14) is in intermediate positions, it can allow some the cold air to be sent to the heat exchanger to be heated, Figure 1).

However, Seki et al does not teach a mixing flap for apportioning the air stream consists of at least three sections and the axis of rotation lies outside these sections, a first section being

arranged in the radial direction or at least at an acute angle to the radial direction with respect to the axis of rotation, a second section being arranged concavely with respect to the axis of rotation, and a third section being arranged in the radial direction or at least at an acute angle to the radial direction with respect to the axis of rotation, in such a way that the first and the third section adjoin opposite ends of the second section so that the three sections form a wall region with a continuous contour.

Nagata et al teaches a mixing flap for apportioning the air stream consists of at least three sections and the axis of rotation lies outside these sections, a first section being arranged in the radial direction or at least at an acute angle to the radial direction with respect to the axis of rotation (e.g. a the seal member (32), Figure 6c), a second section being arranged concavely with respect to the axis of rotation (e.g. a door body (31) has a triangular shape of a slight concave with respect to the rotation shaft (30a, 30b), paragraph 0038), and a third section being arranged in the radial direction or at least at an acute angle to the radial direction with respect to the axis of rotation (e.g. a seal member (33), Figure 6c), in such a way that the first and the third section adjoin opposite ends of the second section so that the three sections form a wall region with a continuous contour (e.g. the door body (31) and the seal members (32, 33) form a continuous contour, Figure 6C).

Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Seki et al with the door with three section with a second section concavely shaped with respect to the axis of rotation of Nagata et al to allow the airflow to better conform with the concave shape of the flap to decrease in amount of turbulence created when the flap has a section curving into the air flow.

Regarding Claim 2, Seki et al and Nagata et al teaches an air conditioner for a vehicle with a blower, an evaporator, heat exchanger, and first flow duct, a second flow duct where a mixing flap with the three section with a concavely shaped second section with respect to the axis of rotation of the flap divide the air stream into the first and second flow ducts wherein the mixing flap has, in cross section with respect to the axial direction, a contour which is constant over the entire length of the mixing flap (e.g. the door body (31) is constant over the length of the door (29), Figure 6c).

Regarding Claim 3, Seki et al and Nagata et al teaches an air conditioner for a vehicle with a blower, an evaporator, heat exchanger, and first flow duct, a second flow duct where a mixing flap with the three section with a concavely shaped second section with respect to the axis of rotation of the flap divide the air stream into the first and second flow ducts wherein the sections of the wall region of the mixing flap merge continuously one into the other (e.g. the seal members (32) are continuous with the door body (31), Figure 6c).

Regarding Claim 4, Seki et al and Nagata et al teaches an air conditioner for a vehicle with a blower, an evaporator, heat exchanger, and first flow duct, a second flow duct where a mixing flap with the three section with a concavely shaped second section with respect to the axis of rotation of the flap divide the air stream into the first and second flow ducts wherein the air-conditioning system has a mixing flap with a wall region, one end of a section of the wall region forming a stop (e.g. the seal members (32) with a V-shaped cross section acts as stops,

paragraph 0039).

Regarding Claim 5, Seki et al and Nagata et al teaches an air conditioner for a vehicle with a blower, an evaporator, heat exchanger, and first flow duct, a second flow duct where a mixing flap with the three section with a concavely shaped second section with respect to the axis of rotation of the flap divide the air stream into the first and second flow ducts wherein the air-conditioning system has a mixing flap with a wall region, two opposite ends of two sections of the wall region in each case forming a stop (e.g. each seal member (32, 33) have a V-shaped cross section which can acts as stops for the door, paragraph 0039, Figure 6c).

Regarding Claim 6, Seki et al and Nagata et al teaches an air conditioner for a vehicle with a blower, an evaporator, heat exchanger, and first flow duct, a second flow duct where a mixing flap with the three section with a concavely shaped second section with respect to the axis of rotation of the flap divide the air stream into the first and second flow ducts wherein the air-conditioning system has a mixing flap with a wall region, one section or two sections of the wall region having sealing regions in the region of the stop surfaces.

Regarding Claim 7, Seki et al and Nagata et al teaches an air conditioner for a vehicle with a blower, an evaporator, heat exchanger, and first flow duct, a second flow duct where a mixing flap with the three section with a concavely shaped second section with respect to the axis of rotation of the flap divide the air stream into the first and second flow ducts wherein the mixing flap has a wall region which is continuous in its entire surface (e.g. the door body (31) is

continuous, Figure 6c).

Regarding Claim 8, Seki et al and Nagata et al teaches an air conditioner for a vehicle with a blower, an evaporator, heat exchanger, and first flow duct, a second flow duct where a mixing flap with the three section with a concavely shaped second section with respect to the axis of rotation of the flap divide the air stream into the first and second flow ducts wherein the wall region of the mixing flap is designed at least partially circularly or in the form of a segment of a circle (e.g. the door (29) is formed as a segment of sphere, Figure 6c).

Regarding Claim 9, Seki et al and Nagata et al teaches an air conditioner for a vehicle with a blower, an evaporator, heat exchanger, and first flow duct, a second flow duct where a mixing flap with the three section with a concavely shaped second section with respect to the axis of rotation of the flap divide the air stream into the first and second flow ducts wherein the wall region of the mixing flap is designed at least partially in an elliptic, parabolic, hyperbolic or another continuously curved shape (e.g. the door body (31) has a parabolic curved shape, Figure 6c).

Regarding Claim 10, Seki et al and Nagata et al teaches an air conditioner for a vehicle with a blower, an evaporator, heat exchanger, and first flow duct, a second flow duct where a mixing flap with the three section with a concavely shaped second section with respect to the axis of rotation of the flap divide the air stream into the first and second flow ducts wherein the mixing flap is articulated on the pivot axis via pivoting arms which widen in the form of a

segment of a circle and are preferably also arranged at the edge (e.g. the sides of the door body (31) before in begins to depress slightly in the center are pivoting arms which widen in a form of sphere, Figure 6c).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRITTANY TOWNS whose telephone number is (571)270-1181. The examiner can normally be reached on Monday-Friday 7:30-5:00, 1st Friday in biweek off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. T./
Examiner, Art Unit 3749

/STEVEN B. MCALLISTER/
Supervisory Patent Examiner, Art Unit 3749